



## PATENT ABSTRACTS OF JAPAN

(11) Publication number: 07144024 A

(43) Date of publication of application: 06.06.1995

(51) Int. Cl. A61N 1/362

(21) Application number: 06187894

(22) Date of filing: 19.07.1994

(30) Priority: 19.07.1993 US 93 93817

(71) Applicant: ZMD CORP

(72) Inventor: FREEMAN GARY A

## (54) ELECTRIC PERCUTANEOUS HEART PACING METHOD AND DEVICE

(57) Abstract:

**PURPOSE:** To stimulate a heart of a patient while reducing stimulation to the skin or a skeletal muscle of the patient by sending out a single pulse row among plural individual pulse rows by an electrode pair different from an electrode pair to send out another single pulse row.

**CONSTITUTION:** An oscillating-driving circuit 40 generates a pulse flow, and an insulating circuit 50 offers the protection against an electric hazard for a patient by insulating interval voltage of a signal generator 10 from the patient. A waveform shaping circuit 60 inputs pulse row output of the insulating circuit 50, and generates pacing stimulation by changing a signal characteristic of a pulse row. Electrodes 70, and 72 give electric stimulation for percutaneous pacing of a heart to the patient. A timing control circuit 20 sets a timing characteristic of the pacing stimulation, and the pacing stimulation contains plural individual pulse rows, and at

least a single pulse row among them is sent out by an electrode pair different from an electrode pair to send out another single pulse row.

COPYRIGHT: (C)1995,JPO

